

CLAIMS:

1. An adhesive for bonding an optoelectronic device within a hermetically sealable package comprising:

a low outgassing adhesive selected to limit the outgassing of organic molecules in a cured state.

2. The adhesive according to claim 1, wherein said low outgassing adhesive includes low volatile organic compounds (VOC), said low VOC have a percent weight loss of less than about 0.5% at a temperature of up to about 120°F (48.9°C).

3. The adhesive according to claim 1, wherein said low outgassing adhesive includes a thermosetting adhesive.

4. The adhesive according to claim 3, wherein said thermosetting adhesive is selected from one of epoxy adhesives, fluorinated ethylene propylene adhesives, acrylic adhesives, and polyester adhesives.

5. The adhesive according to claim 4, wherein said epoxy adhesives further comprise at least one component having one of an aliphatic, a cycloaliphatic, and an aromatic backbone containing more than one alpha-oxirane group capable of being polymerized.

6. The adhesive according to claim 5, wherein said adhesive compositions further comprise an epoxy resin.

7. The adhesive according to claim 6, wherein said adhesive compositions may further comprise a monofunctional epoxy resin in the amount of not more than about 30% by a weight based on a total weight of said epoxy resin.

8. The adhesive according to claim 6, wherein said adhesive compositions may further comprise a monofunctional epoxy resin in the amount of not more than about 20% by weight based on said total weight of said epoxy resin.

9. The adhesive according to claim 5, wherein said adhesive compositions may further comprise a polyfunctional epoxy resin, said polyfunctional epoxy resin including one of bisphenol A epoxy resins, bisphenol F epoxy resins, phenol novolac epoxy resins, cresol novolac epoxy resins, and combinations including at least one of the foregoing.

10. The adhesive according to claim 9, wherein said bisphenol A epoxy resins include diglycidyl ether.

11. The adhesive according to claim 4, wherein said epoxy adhesive includes an epoxy resin and a curing agent curable with radiation.

12. The adhesive according to claim 11, wherein said curing agent includes one of primary, secondary, or tertiary amines and polyamines, substituted ureas, carboxylic acids, anhydrides, phenols, polyamides, formaldehyde resins, polycarboxylic acid polyesters, Lewis acids and bases, polysulfides, polymercaptans, phenol novolac resin, and combinations including at least one of the foregoing.

13. The adhesive according to claim 11 wherein said radiation includes one of heat and ultraviolet light.

14. The adhesive according to claim 1 wherein said adhesive bonds the optoelectronic device to a substrate.

15. The adhesive according to claim 1 wherein said adhesive bonds a cover to the hermetically sealable package, forming an air tight package.

16. The adhesive according to claim 1 wherein the optoelectronic device includes one of an optical fiber, an optical fiber array, a waveguide, and an optical diode.

17. An adhesive for bonding an optoelectronic device within a hermetically sealable package comprising:

a low outgassing adhesive selected to limit the outgassing of organic molecules in a cured state, wherein said low outgassing adhesive includes low volatile organic compounds (VOC), said low VOC have a percent weight loss of less than about 0.5% at a temperature of up to about 120°F (48.9°C).

18. A hermetically sealable package having an optoelectronic device bonded therein comprising:

a housing configured to form a hermetic seal therein;

an optoelectronic device disposed within said package; and

a low outgassing adhesive bonding said optoelectronic device within said package, said low outgassing adhesive selected to limit the outgassing of organic molecules in a cured state in said hermetically sealable package.

19. The package according to claim 18, wherein said low outgassing adhesive includes low volatile organic compounds (VOC), said low VOC have a percent weight loss of less than about 0.5% at a temperature of up to about 120°F (48.9°C).

20. The package according to claim 18, wherein said low outgassing adhesive includes a thermosetting adhesive.

21. The package according to claim 20, wherein said thermosetting adhesive is selected from one of epoxy adhesives, fluorinated ethylene propylene adhesives, acrylic adhesives, and polyester adhesives.

22. The package according to claim 21, wherein said epoxy adhesives further comprise at least one component having one of an aliphatic, a cycloaliphatic, and an aromatic backbone containing more than one alpha-oxirane group capable of being polymerized.

23. The package according to claim 22, wherein said adhesive compositions further comprise an epoxy resin.

24. The package according to claim 23, wherein said adhesive compositions may further comprise a monofunctional epoxy resin in the amount of not more than about 30% by a weight based on a total weight of said epoxy resin.

25. The package according to claim 24, wherein said adhesive compositions may further comprise a monofunctional epoxy resin in the amount of not more than about 20% by weight based on said total weight of said epoxy resin.

26. The package according to claim 22, wherein said adhesive compositions may further comprise a polyfunctional epoxy resin, said polyfunctional epoxy resin including one of bisphenol A epoxy resins, bisphenol F epoxy resins, phenol novolac epoxy resins, cresol novolac epoxy resins, and combinations including at least one of the forgoing.

27. The package according to claim 26, wherein said bisphenol A epoxy resins include diglycidyl ether.

28. The package according to claim 21, wherein said epoxy adhesive includes an epoxy resin and a curing agent curable with radiation.

29. The package according to claim 28, wherein said curing agent includes one of primary, secondary, or tertiary amines and polyamines, substituted ureas, carboxylic acids, anhydrides, phenols, polyamides, formaldehyde resins, polycarboxylic acid polyesters, Lewis acids and bases, polysulfides, polymercaptans, phenol novolac resin, and combinations including at least one of the forgoing.

30. The package according to claim 28 wherein said radiation includes one of heat and ultraviolet light.

31. The adhesive according to claim 18, wherein said adhesive bonds the optoelectronic device to a substrate.

32. The adhesive according to claim 18, wherein said housing includes a cover and package wall, said adhesive bonds said cover to said package wall forming an air tight package.

33. The adhesive according to claim 18, wherein the optoelectronic device includes one of an optical fiber, an optical fiber array, a waveguide, and an optical diode.